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ME SEND E-MAIL TO JOE GUARNACCIA DONE 9-21-11

Memorandum

To	Frank Battaglia, EPA
CC	Joseph Guarnaccia, BASF
Subject	Sediment Sampling Results and Scope of Work for Sediment Removal at Former Ciba-Geigy Facility, Cranston, RI
From	Joanne Lynch / Kris Carbonneau, AECOM
Date	September 16, 2011

Summary of Sampling Results (July 2011). On behalf of BASF, AECOM completed sediment sampling in the Pawtuxet River on July 13 and 14, 2011. The objective of this work was to complete a supplemental assessment of sediment quality in former locations where elevated total PCB concentrations (SD-TUF2C, SD-TUF7C) were measured during historical sediment investigations (RFI Pawtuxet River, 1995). The sampling activities were designed to help delineate areas that could potentially require remediation to address surficial PCB concerns. This field work and analysis was consistent with previous work conducted to delineate PCB concentrations at location SD-2R (see 2/7/11 letter report from AECOM to EPA).

Sediment samples were collected from the historic SD-TUF7C location and the immediate surrounding area. Attached Figure 1 presents actual sediment sample locations from the July 2011 event. Sediment collection locations, SD-32, SD-33, SD-34, SD-35, SD-36 (shown in blue on Figure 1), were submitted for total PCB and total organic carbon (TOC) analyses. Sediment samples were collected from 0-6" (A), 6-12" (B), and 12-24" (C) intervals from each sediment core. Sediment samples from the locations shown in green on Figure 1 were collected and archived with the laboratory. Based on the initial PCB results in the SD-TUF7C area, SD-21 was submitted for PCB analysis from the archive. Analytical results for total PCB and TOC concentrations are presented in attached Table 1. Field observations are presented in attached Table 2.

Similarly, sediment samples were collected from the historic SD-TUF2C location and the immediate surrounding area. However, field conditions indicated that sediment in this area was scoured and there was a significant deposition of debris (e.g., tree branches, logs, cobbles, rocks). Attempts to collect sediment from seven (7) discrete locations in this area were unsuccessful (see Figures 2, 3, and 4 for attempted locations). Sediment collection was possible at four (4) discrete locations, SD-29, SD-42, SD-22, SD-23, as shown on Figure 1. Sediment samples from SD-29 and SD-42 (shown in blue) were submitted for total PCB and TOC analyses. Sediment samples from SD-22 and SD-23 (shown in green) were archived with the laboratory. Based on the initial PCB results from SD-42, SD-23 was submitted for PCB analysis. Analytical results for total PCB and TOC concentrations are presented in attached Table 1. Field observations are presented in attached Table 2.

All sediment PCB data are presented, by depth interval on Figures 2 through 4. Figure 5 presents three discrete areas around SD-2R, SD-TUF7C, and SD-TUF2C, proposed for removal.

Implications of Sampling Results. Based on review of the analytical results, the following observations are made:

- Prior to sampling, data suggested a well-bounded delineation at SD-2R laterally and to a depth of 1 foot in sediment. The proposed work is to excavate sediment over an area of 120 ft^2 to a depth of at least 2 ft, and replace that volume with clean sand. The total volume of sediment removal is approximately 11 CY.

- Two additional areas of potential PCB impact identified from previous sampling results were confirmed. At area SD-42, data provide a well-bounded delineation laterally (90 ft^2) and to a depth of 1 foot to encompass the measured impact depth of 0.5 ft. At area SD-34, data provide a well-bounded delineation laterally (180 ft^2) and to a depth of 2.5 ft to encompass the measured impact depth of 2 ft. Collectively the estimated total volume of sediment removal is 20 CY. This volume will be replaced with clean sand.

Remedial Action Overview. Remedial action is projected to proceed as follows:

Workplan. On behalf of BASF, AECOM would prepare a brief work plan to outline the execution approach for purposes of presentation to EPA for approval. Details on the workplan are provided below.

Performance Specification. Upon receipt of EPA approval, a brief performance specification for use in soliciting bids from one (or more) qualified contractors will be prepared. A formal competitive bid process is not intended for this work to hasten the schedule to allow a 2011 completion; however, a minimum performance specification is needed to communicate the terms of the project and the execution quality assurance. Details on the specification content are provided below.

Contractor Construction Plan. In response to the performance specification, AECOM will receive and review one execution plan from either the sole solicited contractor or the contractor with the lowest stated bid price. Should the contractor specify a land-based removal process (see Construction Execution Approach below) then AECOM will also review potential stability concerns associated with the steel sheet pile wall. Following construction approach review, AECOM would discuss concerns with the contractor and review any needed follow up submission. AECOM has assumed that the contractor will be bound contractually to BASF.

Mobilization/Kickoff. AECOM will schedule and attend a kickoff meeting at the start of the field work. Given the short duration of the work, it is intended that this meeting occur at the start of construction but not prior to mobilization.

Construction Oversight. AECOM envisions that the work will take approximately 6 working days barring weather and equipment related issues. AECOM intends to provide oversight of the contractor.

Field Construction Reports. AECOM will generate daily construction reports for inclusion in a final completion report. AECOM will also review the post-dredge data report provided by the contractor to confirm that the actual removal volumes are consistent with the work plan.

Construction Completion Report. AECOM will generate a concise construction completion report for purposes of documenting the removal for EPA. It is envisioned that the report will consist of a summary of the daily report forms inclusive of a photo log as well as the review and confirmation of post-dredge removal.

Engineering Work Plan Approach. AECOM will generate a workplan for submission to EPA. The purpose of the workplan is to establish guidelines for the removal work for review, comment and approval by EPA. The workplan will outline the following:

- Site location and project limit of work boundaries
- Site conditions including access points, elevations, grades, structures and utilities (to the extent known)
- Dredge areas, depths and overdepth requirements
- Material characterization (from historical data)
- Contractor staging and set down areas as well as sediment stockpiling and dewatering area
- Site access and work limitations
- Allowable forms of removal and re-suspension limits ←
- Minimum standards for controlling sediment re-suspension and soil erosion ←
- Construction quality assurance requirements
- Collection and management of sediment decant water (on water and on land) ←
- Backfill material description and placement method
- Post removal data collection and documentation for post-construction completion report

COMPLY W/ HAZ WASTE MANIFESTS

NOISE & ODOR ISSUES

AECOM will generate the workplan for submission to BASF for review, make necessary revisions and submit to the EPA. It is anticipated that the scope of comments will not require more than one (1) day of revisions to finalize the document. AECOM anticipates review and approval by EPA within 7 calendar days.

Construction Execution Approach. AECOM will generate a construction performance specification which will include prepared scaled figures with established survey data and datum which will serve as a project plan which one or more qualified area contractors will receive. Given the short timeframe for conducting this work, it is AECOM's intention to provide the performance specification to more than one qualified contractor so as to receive at least one firm bid which complies with the window of execution (i.e., by the end of calendar 2011).

While it will be up to the contractor to select their preferred method of executing the removal work, two general approaches exist. One method is to use a long-arm excavator positioned on shore to conduct the removal and the second is to mount a mechanical dredge on a barge and conduct in-water removal. In each case, backfilling with sand would use the same placement method as with removal. Method of selection may be a function of contractor availability if land-based operations are not restricted based on the proximity of the power lines over the Facility Railroad Bridge. The anticipated sequence of the execution is as follows:

- Mobilize equipment to site
- Construct ancillary facilities including dewatering pad and upland soil erosion controls
- Secure staging/access points for sediment removal and on-site transport equipment and confirm infrastructure suitability to support the staging/access

- Deploy silt curtain to minimize dispersion of re-suspended sediment — ANCHORED
- Conduct removal activities and stockpile sediment on dewatering pad — COVER DAILY w/ BERM
- Process sediment as needed with reagent to address free liquids
- Load out soil into transfer trucks with collection and analysis of sediments as required by the final disposal facility — MANIFEST
- Backfill sandy soil into excavation to restore grades — WITNESS BARRIER?
- Analyze decant water for offsite management – MANIFEST
- After confirming adequate removal depths have been achieved, demobilize all equipment and materials from the site.

The contractor will need to summarize their construction approach in a technical execution plan which AECOM will review and comment on prior to mobilization. In addition to the technical requirements of this work, the contractor will need to assure AECOM that it has adequate health and safety procedures in place to perform the work through the preparation and submission of a Health and Safety Plan.

Projected Implementation Schedule. The approximate projected schedule for the scope of work is as follows:

• Workplan:	9/16 – 10/7
○ Submittal to EPA:	10/11
○ Approval from EPA:	10/17
• Performance Specification:	10/17 – 10/24
• Contractor Generates Construction Approach:	10/24 – 10/28
• Review of Construction Approach:	10/31 – 11/4
• Mobilization and Preconstruction Meeting:	11/14
• Project Field Completion:	11/30
• Project Completion Report:	11/30 – 12/23
○ Submittal to EPA:	12/23
○ Approval from EPA:	12/30

The milestone dates for this work include removal completion prior to the Thanksgiving holiday and project completion report submission prior to the end of the calendar year.

Thank you for your attention to this project. We look forward to discussing the project in more detail and addressing any comments or concerns that you may have.

Sincerely yours,

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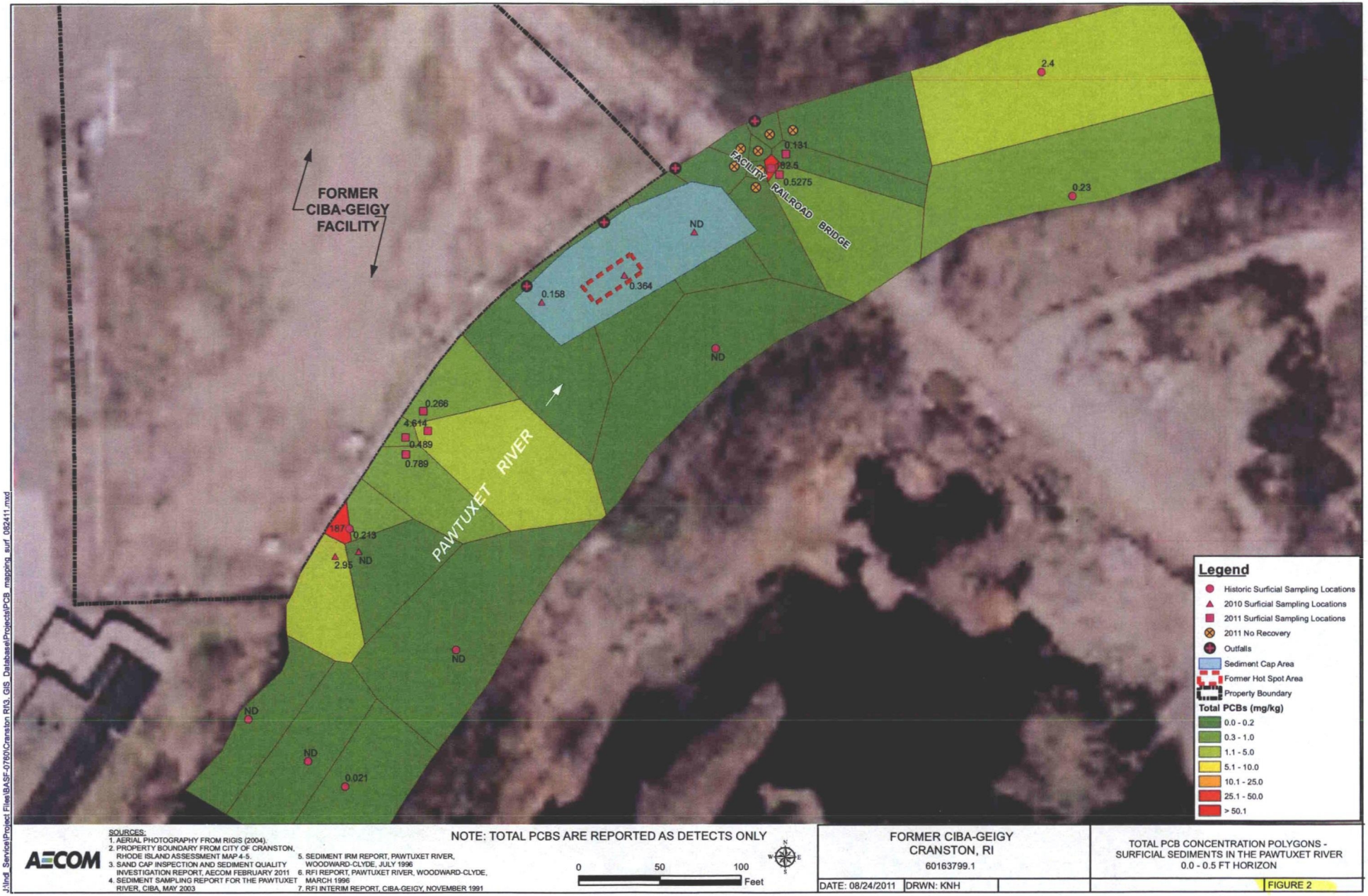

J:\Ind_Service\Project Files\BASF-07601Cranston RI\3_GIS_Database\Projects\PCB_mapping_surf_082411.mxd

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SOURCES:
1. AERIAL PHOTOGRAPHY FROM RIGIS (2004).
2. PROPERTY BOUNDARY FROM CITY OF CRANSTON, RHODE ISLAND ASSESSMENT MAP 4-5.
3. SAND CAP INSPECTION AND SEDIMENT QUALITY INVESTIGATION REPORT, AECOM FEBRUARY 2011
4. SEDIMENT SAMPLING REPORT FOR THE PAWTUXET RIVER, CIBA, MAY 2003
5. SEDIMENT IRM REPORT, PAWTUXET RIVER, WOODWARD-CLYDE, JULY 1996
6. RFI REPORT, PAWTUXET RIVER, WOODWARD-CLYDE, MARCH 1996
7. RFI INTERIM REPORT, CIBA-GEIGY, NOVEMBER 1991

NOTE: TOTAL PCBS ARE REPORTED AS DETECTS ONLY

0 50 100 Feet

N W E S

FORMER CIBA-GEIGY
CRANSTON, RI
60163799.1

DATE: 08/24/2011 | DRWN: KNH

TOTAL PCB CONCENTRATION POLYGONS - SURFICIAL SEDIMENTS IN THE PAWTUXET RIVER 0.0 - 0.5 FT HORIZON

FIGURE 2

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3. RFI REPORT, PAWTUXET RIVER, WOODWARD-CLYDE, MARCH 1996

0 30 60 Feet

FORMER CIBA-GEIGY
SITE INVESTIGATION
CRANSTON, RI
60163799.2

DATE: 08/08/11 | DRWN: KNH

JULY SEDIMENT SAMPLE LOCATIONS

FIGURE 1

34c - 1-2FT
42A 0-1/2 FT
HIGH HITS
SD-38?